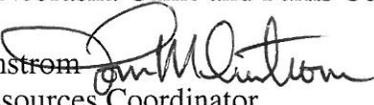


MEMORANDUM

DATE: March 28, 2013

TO: Lincoln City Council, Lower Platte South Natural Resources District Board of Directors, Nebraska Game and Parks Commission, and The Nature Conservancy

FROM: Tom Malmstrom 
Natural Resources Coordinator
Parks and Recreation Department
Saline Wetlands Conservation Partnership

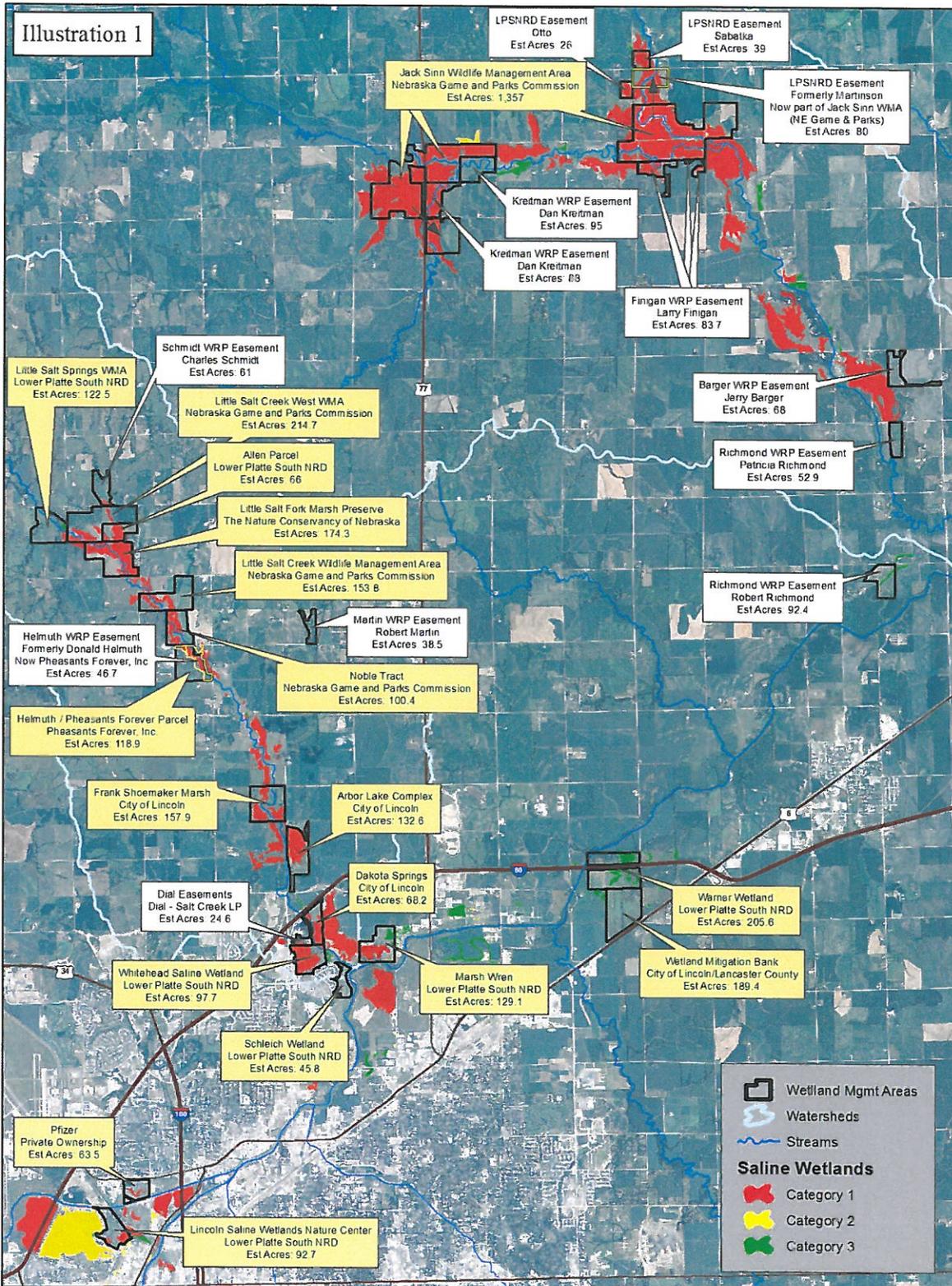
RE: Saline Wetlands Conservation Partnership – 2012 Progress Report

On behalf of the Saline Wetlands Conservation Partnership (SWCP) I want to make you aware of the activities, which occurred in 2012. The SWCP was initiated in 2003 and continues to progress. The City of Lincoln has been awarded four Nebraska Environmental Trust Fund (NET) grants for the eastern saline wetlands. The grants were received in 2002, 2005, 2008 and 2012. The City of Lincoln received a \$1,400,000 grant over a three year period in 2012. The current grant period will terminate on June 30, 2015. These grants have been used for land acquisition and restoration purposes and provide matching funds for other grant opportunities.

Efforts of the SWCP are to protect, restore, and manage the rare and unique saline wetland habitat. The Partnership continues to utilize the "Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands (2003)," for guidance in efforts to conserve the saline wetlands. Since its inception, partners have purchased nearly 1,250 acres of saline wetlands and other associated upland habitat, initiated educational activities, participated in saline wetland restoration projects, and provided for operation and maintenance of these areas.

Illustration 1 identifies saline wetland properties, which have been acquired through fee-title acquisitions or conservation easements since the 1980's.

Illustration 1



Map Updated: September 2012 - Lower Platte South NRD

SUMMARY OF 2012 ACTIVITIES

LAND ACQUISITIONS

- **Marsh Wren addition** – East of 40th Street and immediately north of Salt Creek

Size: 49.4 acres
Purchase price and date: \$270,000 on June 19, 2012
Funding sources: Federal Section 6 (\$135,000)
2008 NET Grant (\$130,000)
SWCP (\$5,000)
Owner: Lower Platte South Natural Resources District



Notes – The property contains nearly 25 acres Category 1 saline wetlands, which is identified as critical habitat for the endangered Salt Creek tiger beetle. Floodplain encompasses approximately 44.3 acres of the property.

Activity summary – Noxious weed control was initiated on large stands of Phragmites and musk thistle. Photos were taken to document the landscape at established photo-points. Old fencing was removed and an abandoned well was properly closed by the Lower Platte South NRD.

WETLAND RESTORATION

Arbor Lake, located north of Interstate 80 along 27th Street is a 132 acre area containing over 65 acres of saline wetlands. It is owned by the City of Lincoln. The public recreation area provides habitat for a variety of wildlife and plant species.

A wetland restoration conceptual design was completed in August 2009. In 2010, the City of Lincoln hired The Flatwater Group, Inc. to complete the final design for the wetland restoration. A core and technical planning team consisting of several agency representatives worked with the consultants on the final design. An Open House was held on October 19, 2010 and was attended by 27 persons.

The final design for the restoration was completed in December 2010. Commercial Contractors Equipment performed construction of the wetland restoration project. The construction project began in September 2011 and was completed in May 2012.

The various components of the restoration included: restoration to enhance and restore degraded wetland systems; remove and replace existing berm and outlet structure; remove sediment in wetland areas; construct sediment control dikes; install water level control structures in wetland areas; removal of undesirable vegetation (cattails); installation of grade control structures within the tributary; reshaping and restoring the banks of the tributary at selected areas; and improve access within the site for land management.

This project was funded primarily with Federal Section 319 funds and the 2008 NET Grant, all received by the City of Lincoln. The following table provides a breakdown of the project costs.

Project Component	Amount	Source of Funding
Engineering		
Preliminary	\$52,500.00	Federal Section 319
Final Design	\$120,000.00	
Construction	\$106,625.44	
Construction		
Restoration work	\$93,189.14	Federal Section 319
Restoration work	\$476,053.37	Nebraska Environmental Trust Fund -2008
Monitoring wells	\$18,374.56	
Native seeding	\$6,911.25	Saline Wetlands Conservation Partnership
Benches	\$3,000.00	
TOTAL COST	\$876,653.76	

ARBOR LAKE WETLAND RESTORATION

Endangered species habitat bench



**Pre-construction
(viewing east)**



**Mid-restoration construction
(viewing east)**



**Post-construction
(viewing west)**

WETLAND MANAGEMENT

Three seasonal employees were hired by the City of Lincoln in 2012 to perform management on the saline wetland areas. Members of the Partnership established management activities to be addressed within the saline wetlands complex. These employees primarily worked on noxious weed and woody vegetation removal, structure maintenance, and access. Funding for these positions is provided with 2001 State Wildlife Grant funds the NGPC received from the U.S. Fish and Wildlife Service (USFWS). A total of 633.5 hours were worked by the seasonal employees in 2012 on saline wetland management activities primarily from May through mid-August. The Coordinator provided supervision of the employees.

SALINE WETLAND RESEARCH

The SWCP has worked with partners on a variety of projects within the saline wetlands. Funding for some of these projects has come from the U.S. Fish and Wildlife Service and the U.S. Environmental Protection Agency. Following is a summary of research conducted in 2012.

Salt Creek Tiger Beetle Research

The following research information provided by:
Stephen M. Spomer
Entomology Department, University of Nebraska-Lincoln
Federal Permit #TE37351A-0
State Permit #9

Field Collection and Rearing – Summary for 2012

Permits for obtaining eggs from *C. n. lincolniana* allowed field collection of females and males. A total of 15 SCTB were collected on May 25, 2012 and 24 collected on May 29, 2012. The Adults were returned to the collection site.

Captive rearing is being conducted in cooperation with the Omaha Henry Doorly Zoo. Surrogate beetles (*C.togata*) were collected on August 9, 2012 at Arbor Lake for ovipositional and soil studies being conducted at the Omaha Henry Doorly Zoo.

Population Estimates for 2012

The first visual of a Salt Creek tiger beetle adult was on May 19, 2012. Preliminary surveys began on May 25, 2012. The population estimates were conducted between June 7, 2012 and June 12, 2012. A total of 374 Salt Creek tiger beetles were counted. The adult beetles were gone by the Middle of July 2012.

Atrazine testing and Plains leopard frog (*Lithobates blairi*) collection at Whitehead Saline Wetlands, Arbor Lake, and Shoemaker Marsh

The following research information provided by:

Michelle Hellman

Wildlife Ecology Master's Candidate

University of Nebraska-Lincoln

School of Natural Resources

Lindsey Knight

Aquatic Toxicology Lab Master's Candidate

University of Nebraska-Omaha

Dr. Alan Kolok, Professor

Aquatic Toxicology Lab

University of Nebraska-Omaha

University of Nebraska Medical Center

Proposed Work: Whitehead Wetland, Shoemaker Marsh, and Arbor Lake were chosen as sites for a pilot season (2012) to assess atrazine and physiological and hormonal impacts on male Plains leopard frogs (*Lithobates blairi*). These sites were selected as probable “reference” sites with the intent to collect frogs with little to no atrazine exposure to provide a genetic baseline to be used with a novel method for assessing hormonal and physiological impacts of atrazine on the sexual development of male leopard frogs. This technique utilizes mRNA from hepatic tissue to determine what androgens were being produced near the time of collection. This approach could allow researchers to detect hormonal changes that are below the threshold for physical change to gonads (the most common method for assessment of impacts on reproduction).

Pilot season: Water testing was conducted during daylight hours. Frog collection occurred by spotlighting at night. Sampling occurred from May 9, 2012 through June 12, 2012. At each of these three sites, the water was tested using an Abraxis Atrazine test strip that indicates if atrazine levels are at or above 3ppb. Although there were some borderline readings, possibly due to user error, it was concluded that all three sites did not contain Atrazine at levels sufficient to set off the test strips. Arbor Lake was used as the reference site and 5 females and 3 males were collected over the course of two nights. These frogs were transported to Dr. Alan Kolok's lab at UNMC for liver tissue and gonad analysis. All frogs have been dissected and tissue analysis is currently underway at UNMC.

Future work: Currently no further work is planned within the Salt Creek watershed. The next stage will be the continuation and conclusion of genetic work being completed in Dr. Kolok's lab. If the method proves to be successful at identifying hormonal changes in Atrazine exposed frogs this method could be applied to agriculturally proximate wetlands throughout the state.

Acknowledgements: Work was completed with the cooperation and aid of the Lower Platte South Natural Resources District, City of Lincoln Parks and Recreation Department, and a small but enthusiastic group of volunteers.

Testing the assumptions of occupancy modeling and timing of breeding call surveys for monitoring amphibian populations

The following research information provided by:

Nicholas Smeenk

Nebraska Cooperative Fish and Wildlife Research Unit, School of Natural Resources,
University of Nebraska –Lincoln

Craig Allen

USGS, Nebraska Cooperative Fish and Wildlife Research Unit, School of Natural Resources,
University of Nebraska –Lincoln

Amphibian call surveys are frequently used as a method to monitor anuran populations. Call surveys involve visiting potential habitat sites and listening for the breeding calls of frogs and toads for a set period of time. These data can then be used to model the presence-absence of amphibian species using survey and site-specific variables and a modeling technique called occupancy modeling. This method, however, assumes that sites are “closed”, meaning that no species disappear from or immigrate to sites within sampling periods. Furthermore, there is no standardized length of a season for the use of call surveys in studying amphibian populations, with “seasons” ranging from a few days in length to months in length. Therefore, this project research has one primary objective, to test the assumption of “closure” when using occupancy modeling in conjunction with amphibian call surveys.

Methods

Study sites

We conducted breeding call surveys at four wetland sites located in and around Lincoln, Nebraska. Study sites are located on public lands owned and managed by the City of Lincoln, Lower Platte South Natural Resources District, and Nebraska Game and Parks Commission. Site one is an NRD wetland located in northern Lincoln, south of I-80, adjacent to N 28th Street and Wildcat Drive. Sites two and three are located on the north end of Frank Shoemaker Marsh and the north end of Arbor Lake, both on N 27th Street and owned by the City of Lincoln. The fourth site is a Pheasants Forever property located north of Lincoln and managed by the Nebraska Game and Parks Commission.

Call surveys

Call surveys were conducted by two researchers over a four week period from April 9 through May 5. Surveys were only conducted on nights with the following weather conditions: wind speed < 15 mph, no heavy rainfall, and air temperature > 32°F. We began call surveys at one half hour after sunset. Because anuran calling activity can be disrupted by the arrival of researchers, a two minute acclimation period was observed prior to beginning call surveys at each site. After the acclimation period, a five-minute calling survey was conducted, during which all audible species were recorded.



Clockwise starting from top left: western chorus frog (*Pseudacris maculata*), northern cricket frog (*Acris crepitans*), plains leopard frog (*Lithobates blairi*), and Woodhouse's toad (*Anaxyrus woodhousii*). Photo credit: Nicholas Smeenk.

Results: We were able to conduct call surveys on 17 nights over the four-week study period. Surveys were conducted on at least four nights during each week. A total of five anuran species were detected over the four week period: Woodhouse's toads (WHT; *Anaxyrus woodhousii*), northern cricket frog (NCF; *Acris crepitans*), Cope's grey treefrog (CGT; *Hyla chrysoscelis*), western chorus frog (WCF; *Pseudacris maculata*), and plains leopard frog (PLF; *Lithobates blairi*). Only four species were detected during the first three nights of surveys, although each species was only detected at a single site on any given night; detection rates (i.e. the number of sites where a species is detected) increased and WHT were detected following a rainfall between visits 3 and 4 (Figure 1). WCF and NCF were the most frequently detected species and WHT was the least frequently detected species over the four-week period (Figure 2) and detection rates for all species differed by week (Figure 1).

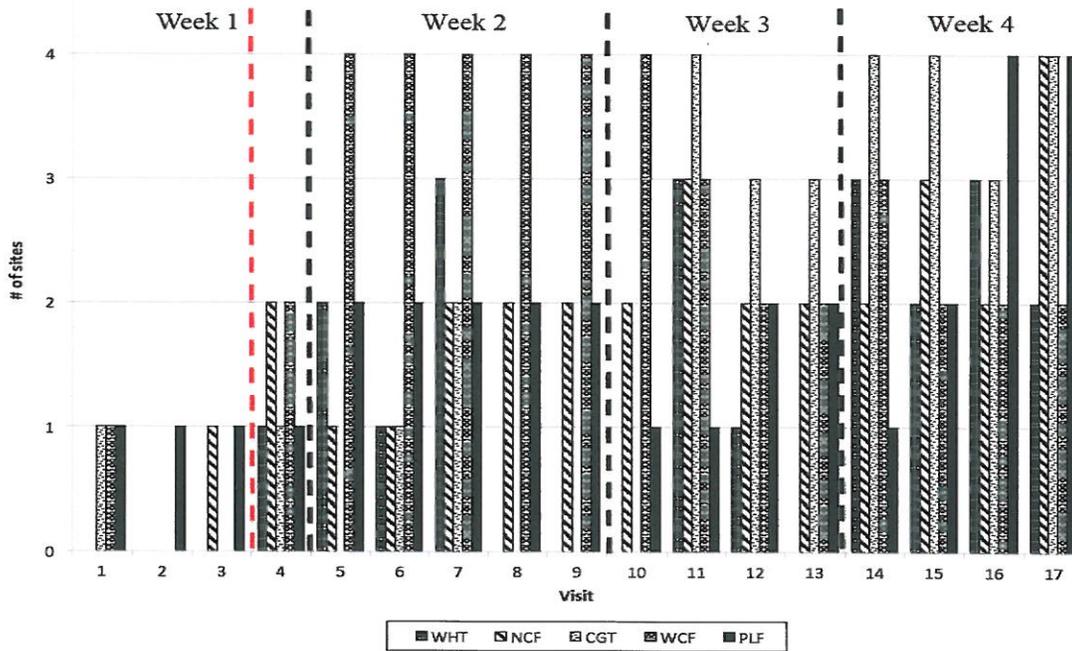


Figure 1. The number of sites where the five species of anurans were detected during each of the 17 call surveys. The red dashed line indicates the occurrence of a significant rain event and the black dashed lines divide the visits by week. Species were detected more frequently and at more sites after the continued occurrence of rain.

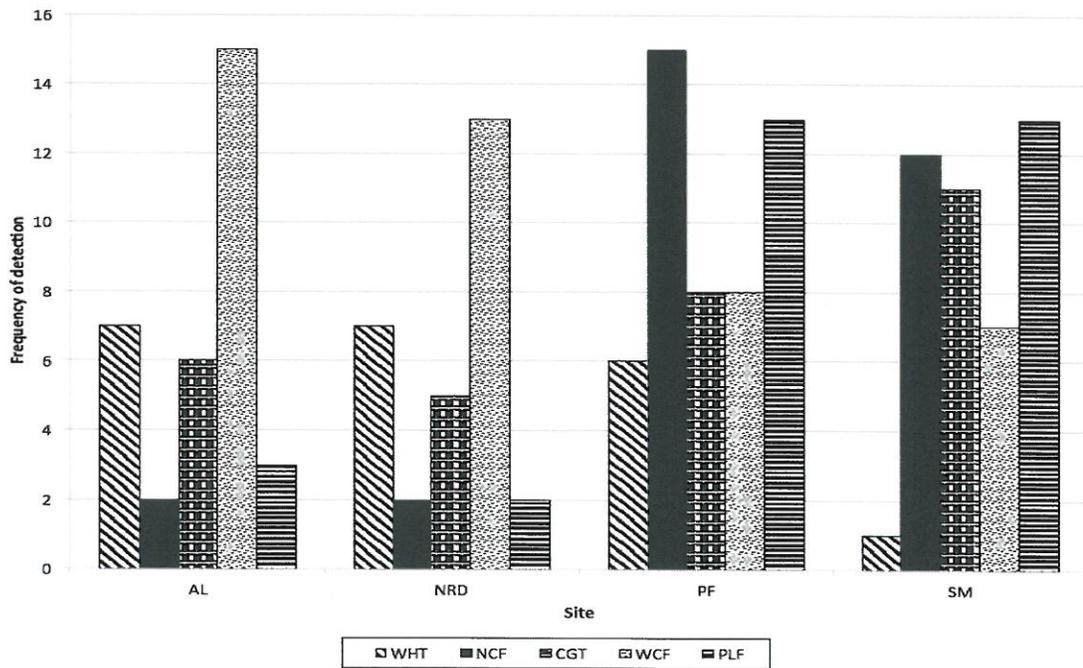


Figure 2. The frequency with which anuran species were detected at each of the four sites. Northern cricket frogs (NCF; *Acris crepitans*) and western chorus frogs (WCF; *Pseudacris maculata*) were the most frequently detected species, while Woodhouse’s toad (WHT; *Anaxyrus woodhousii*) was the least frequently detected species.

Discussion: All species were detected at least once at every site. In occupancy modeling, variations in the detection frequencies of the five species during the call surveys may result in varying detection and occupancy estimates depending on when surveys occurred. Amphibian studies that use call surveys vary in study duration and the number of site visits conducted. Typically, researchers may conduct surveys for one to four weeks and visits sites between two and four times during that time frame. Preliminary analyses suggest that the length of sampling period as well as the number of site visits both may influence the estimated detection and occupancy rates associated with occupancy modeling. Furthermore, results indicate that variations when those visits occur, in terms of both week and day of the week, will result in differing estimates of both detection and occupancy.

Furthermore, significant weather events, such as rainfall or drought, both of which occurred during sampling, may also strongly influence the detection of amphibian species during surveys. Unfortunately, due to the limited amount of time spent surveying sites on any given night, such events may have a significant effect on the calculation of detection and occupancy probabilities. These results indicate that in unstable climates, where periods of drought may intermix with periods of rainfall, a longer study period may be necessary in order to obtain better estimates of both detection and occupancy. In stable climates, however, shorter study periods may be sufficient for these estimates.

Additional analyses should further elucidate the relationship between the length of study period and the total number of visits in the calculation of both detection and occupancy rates.

Acknowledgements: This research would not have been possible without the diligent work of field technicians Nathan Baird and Jonathan Knudsen. We must also thank the City of Lincoln, Lower Platte South Natural Resource District, and Nebraska Game and Parks Commission for granting permission to access the sites for this research.

Measurement of greenhouse gas fluxes originating from saline soils

The following research information provided by:

Alicia Lenner

Environmental Studies Under-graduate Candidate

University of Nebraska-Lincoln

Dr. Amy Burgin, Assistant Professor

School of Natural Resources

University of Nebraska –Lincoln

During the summer of 2012 four gas collection chambers were placed at Frank Shoemaker Marsh to collect data. The chambers were located 40 meters apart near the center of a saline wetland area to measure the greenhouse gas fluxes originating from the soils. The cylinder chambers made of PVC pipe were situated 1-2” below the soil surface. The gas was collected by placing a lid over the chambers, when idle the chambers remained open to allow sunlight and rain to pass through. The measurements were taken every two weeks for a 12 week period concluding in November 2012.

The data is currently being interpreted. The results of the research conducted on the saline wetland will be available by May of 2013.

ENDANGERED SPECIES

The Salt Creek tiger beetle (*Cicindela nevadica lincolniana* Casey) was listed as a Federal endangered species on October 2005. It is endemic to the saline wetlands in Lancaster and southern Saunders counties. Saltwort (*Salicornia rubra*) is a state listed endangered species. Saltwort is only found in the saline wetlands.



In 2007, the U.S. Fish and Wildlife Service listed the Proposed Rule in the Federal Register regarding the Designation of Critical Habitat for the Salt Creek tiger beetle (SCTB). In April 2009, the USFWS reopened Critical Habitat Designation to add a total of 138 acres to three of the four previously proposed units. As a result, the proposed revised critical habitat designation for the species now includes four critical habitat units totaling approximately 1,933 acres. The rule was made final on April 6, 2010.

In February 2011, three conservation groups; The Center for Native Ecosystems; Center for Biological Diversity; and the Xerces Society sued the U.S. Fish and Wildlife Service saying it was not protecting enough habitat to save the insect. An agreement was reached in June 2011, to require the Service to re-examine the areas already designated as critical habitat but also new areas in Lancaster County. The re-evaluation must be completed by April 1, 2013.

In the spring of 2012, the City of Lincoln, Nebraska Game and Parks Commission, and Lower Platte South Natural Resources District worked with the U.S. Fish and Wildlife Service, Omaha Henry Doorly Zoo, and Lincoln Children Zoo to identify areas for re-introduction of the endangered species.



In May 2012, eleven larvae of the Salt Creek tiger beetle were released through a cooperative captive rearing program between the USFWS, NGPC, UNL, Omaha Henry Doorly Zoo, and the Lincoln Children Zoo. Researchers intensively monitored the released larvae. Weekly visual inspections recorded burrow size changes and monitoring equipment records the soil temperature and moisture 12 to 18 inches below the surface, the depth of most larval burrows.

SUMMARY OF SALINE WETLANDS AND SOILS PROTECTED (2001-2012)

In order to preserve and restore these wetlands, an Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands was completed in 2003. This plan identifies four Landscape Objectives, which establish projection and restoration targets for the conservation of the Eastern Saline Wetlands. A summary of acres acquired through fee-title acquisition since 2001 by the SWCP is provided below. Conservation easement information is not provided in the summary.

LANDSCAPE OBJECTIVE	ACRES OF WETLAND PROTECTED OR RESTORED
1 – Permanently protect 100% (148 acres) of intact Category 1 saline wetlands and their associated conservation zones to ensure that the wetlands and their functions are sustained	28.7
2 – Restore and Protect 80% (1,412 acres) of unprotected degraded Category 1 saline wetlands and their associated conservation zones to ensure that the wetlands and their functions are sustained	230.1
3 – Restore (to intact Category 1 wetlands) and protect 50% (167 acres) of unprotected Category 3 saline wetlands and their associated conservation zones to ensure that the wetlands and their functions are sustained as intact Category 1 wetlands	62.0
4 – Restore (to intact Category 1 wetlands) and protect 50% (2,360 acres) of unprotected current non-wetland areas on saline hydric soils so that they become intact and sustained Category 1 saline wetlands	287.4
TOTAL	608.2

Source: Ted LaGrange and Rachel Simpson of the NGPC, August 2011 and 2012

EDUCATION

- North Star High School – Coordinator established annual program with environmental studies class on saline wetlands in 2005. The coordinator in cooperation with the environmental studies instructor at North Star sponsors field trips for a selected group of students to the saline wetlands. The field trips include presentations to the students by personnel of the LPSNRD, UNL, NGPC, and the NRCS. Topics covered regarding the saline wetlands included vegetation, hydrology, entomology, restoration and mitigation, management, soils, well monitoring and sampling, wildlife, and the relationship of urbanized development with natural areas. In the fall of 2012, a total of six (6) field trips and three (3) class presentations were held.
- Coordinator educational presentations - The Coordinator continues to present “saline wetland jeopardy” to fifth grade students attending the Earth Wellness Festival. Other presentations were given to local groups and conservation agencies.
- Coordinator participates in Elementary School Nature Nights and field trips to saline wetlands sponsored by the LPSNRD



FUNDING RESOURCES

- Federal Section 319 Grant (2007 and 2009) – The coordinator on behalf of the City of Lincoln submitted a grant in 2005 for Federal Section 319 funds in the amount of \$500,000 for the saline wetland complex. In November of 2007, the City was awarded \$250,000 with the additional \$250,000 awarded in 2009. A total of \$279,125.44 was expended for engineering services related to the Arbor Lake Wetland Restoration Project. A total of \$51,804.34 was expended for Arbor Lake Wetland Restoration construction. The Grant Period ended on September 30, 2012. A total of \$169,070.22 was not expended. A Final Report was completed and submitted to the Nebraska Department of Environmental Quality on September 30, 2012.
- 2008 Nebraska Environmental Trust Grant – The grant amount is \$1,200,000 over a three year period. A total of \$649,250.40 was expended for land acquisition and a total of 525,571.80 were expended on wetland restoration projects. A remaining total of \$25,177.80 was transferred to the 2012 grant for continued use of saline wetland projects. A Final Report was completed and submitted to the Nebraska Environmental Trust in September 2012.
- Federal Section 6 – In 2011, the NGPC through the U.S. Fish and Wildlife Service was awarded \$135,000 for the acquisition of a property containing saline wetlands. This funding was used for the acquisition of the Marsh Wren addition in 2012.

In 2012, the NGPC through the U.S. Fish and Wildlife Service was awarded \$270,000 for the acquisition of a property containing saline wetlands. Discussions were held with the landowner in the fall of 2012 and it was agreed to have the property appraised in 2013 to initiate negotiations.

- A grant was submitted to the Nebraska Environmental Trust in 2011 for the “Eastern Saline Wetlands Project – 2012.” The grant was approved in the amount \$1.4 million for land acquisition, restoration, and planning activities for a three year grant period. To date, there have been no expenditures from the award.
- In 2012, The Nature Conservancy and the Lower Platte South Natural Resources District amended a previous grant agreement to specifically build, enhance and/or maintain effective ecological stewardship of the saline wetlands. Beginning June 30, 2012 and through July 1, 2019 The Nature Conservancy will disburse \$7,500 annually contingent upon corresponding disbursement of matching funds from the Lower Platte South Natural Resources District for the Project.

SUMMARY OF OTHER COORDINATOR ACTIVITIES

- Participate in Nebraska inter-agency wetland meetings sponsored by the U.S. Corps of Engineers
- Attended meetings regarding City and County projects regarding construction activities scheduled near or on saline wetland areas
- Presented information regarding the saline wetlands to Mayor's Environmental Task Force, LPSNRD Recreation, Forestry, and Wildlife sub-committee, LPSNRD Board of Directors, The Nature Conservancy Board of Directors, NGPC Habitat Partners Section meeting, and Nebraska Natural Legacy Project conference
- Toured saline wetland areas with several agencies and local zoos regarding endangered species recovery habitat for re-introduction
- Youth education – presented and participated in elementary school Nature Nights sponsored by the Lower Platte South NRD, the Earth Wellness Festival, Nebraska Bird Partnership Education Workgroup, and UNL Career Day
- Land management – Supervision of seasonal employees, annual saline wetland area task discussions with land managers from other agencies, noxious weed and woody vegetation control at publicly owned saline wetland sites, attended weed summit, and establish GPS locations for noxious weeds. Participated in two prescribed burns on saline wetland areas
- Completed 2012-2015 inter-local agreement between the City of Lincoln, Lower Platte South NRD, and the Nebraska Game and Parks Commission
- Toured saline wetland projects with the Nebraska Department of Environmental Quality (NDEQ)
- Submitted two 319 grant applications for saline wetland projects to NDEQ; grants were not selected for funding
- Completed Final Reports for 2009 Federal Section 319 grant and 2008 Nebraska Environmental Trust Fund grant
- Assisted with protocol of the pesticide application regulations for the saline wetlands
- Participate with Natural Resources and Conservation Service (NRCS) B Team regarding the scoring and design of Wetland Reserve Program applications in Lancaster County
- Project Manager for the Arbor Lake Complex wetland restoration project.
- Participant and core team representative of Nebraska Wetland Assessment grant project through the NGPC
- Miscellaneous grant administration and participation in grant applications through conservation agencies regarding wetland projects
- Worked on proposal for Plan for the Upper Little Salt Creek Saline Wetlands and information for 2013 saline wetlands planning seminar

SALINE WETLAND PROPERTIES

- **Frank Shoemaker Marsh** – 27th Street and Bluff Road
 - Size: 160 acres
 - Purchase price and date: \$472,000 on June 12, 2003
 - Funding sources: 2001 State Wildlife Grant through the USFWS (\$222,000)
2002 NET grant (\$250,000)
 - Owner: City of Lincoln

Activity summary – Noxious weed removal continued and included the documentation of several new plots of Phragmites. Post-restoration monitoring includes observations of wetland vegetation and management of the hydrology through the five water control structures in place.

Prescribed fire was completed in spring 2012 on approximately 10 acres. Firebreaks were completed in southwest cell for potential 2013 burn. Undesirable vegetation was mowed in southeast and northwest wetland cells in 2013 for preparation of chemical spray to reduce competition with desirable wetland plant communities.

Several monitoring wells installed by UNL are continually monitored. The total number of wells includes three shallow wells (15-30 feet), three intermediate wells (60-90 feet), and one deep well (~180 feet).

- **Dakota Springs** – South of Arbor Road and East of 27th Street
 - Size: 68.7 acres
 - Purchase price and date: \$204,700 in January 2004
 - Funding sources: Federal Section 6 (\$153,525)
2002 NET grant (\$51,175)
 - Owner: City of Lincoln

Dakota Springs Extension Purchase (Dial Realty, 7.45 acres)

Purchase price and date: \$48,500 on December 31, 2008
Funding source: Federal Section 6

Activity summary – Noxious weed and woody vegetation removal continued. Portion of property hayed and field road rocked to allow access during wet conditions.

Monitoring wells installed by UNL and are continually monitored. The total number of wells in place includes two shallow wells (15-30 feet) and two intermediate wells (60-90 feet).

- **Warner Saline Wetlands** - 98th Street and Interstate 80
 Size: 140 acres
 Purchase price and date: \$298,580 on December 7, 2004
 Funding sources: Federal Section 319 (\$179,148)
 LPSNRD (\$43,043.20)
 SWCP (\$76,388.80)
 Owner: LPSNRD

Activity summary – Noxious weed control and woody vegetation removal continues with honey locust and cedars. North parcel is a youth mentor hunt site.

- **Little Salt Creek Wildlife Management Area** – 1st Street and Raymond Road
 Total Size: 256.5 acres
 Purchase price and date: \$476,000 in June 2004 (original 156 acres)
 Funding sources: Federal Section 6 (\$276,000)
 2004 NET grant through NGPC (\$200,000)
 Owner: NGPC

Noble Tract Extension - Along Little Salt Creek, between Mill Road and the southern boundary of the original Little Salt Creek Wildlife Management Area. (100.5 acres)

Activity summary – Prescribed grazing and haying of upland was conducted. Cedar removal and noxious weed control continues. Firebreaks were initiated on western area for potential 2013 burn.

Monitoring wells were installed by UNL and are continually monitored. The total number of wells includes three shallow wells (15-30 feet) and three intermediate wells (60-90 feet).

- **Little Salt Creek West Wildlife Management Area** – South of Branched Oak Road between NW 12th and 1st Streets
 Total Size: 220.0 acres
 Purchase price and date: \$979,000 on October 9, 2009
 Funding sources: Federal Section 6 (\$560,000)
 2005 NET Grant (\$42,838.58)
 2008 NET Grant (\$366,250.42)
 Ducks Unlimited (\$10,000)
 Owner: Nebraska Game and Parks Commission

Activity summary – Prescribed grazing was conducted. Cedar removal and noxious weed control continues. Food plots were established and former farmed ground planted with natives. Prescribed fire completed during spring of 2012 on approximately 30 acres.

- **Arbor Lake Complex** – North of Arbor Road and east of 27th Street.
 Total Size: 132.5 acres
 Owner: City of Lincoln

Arbor Lake Extension Purchase (Anderson Property, 69.2 acres)

Purchase price and date: \$361,710.67 on September 1, 2004
 Funding source: 2002 NET grant through City of Lincoln

Activity summary –Wetland restoration construction was completed in May 2012. Native seeding was completed on areas disturbed during construction. Gates installed at entry points. Public use area with benches was seeded. Solar pumps installed at two well locations for future research, which included the construction of a south well nest of three wells (shallow, intermediate, and deep depth). Photos taken at established GPS points during mid-restoration and post-restoration periods.



Monitoring wells installed by UNL are continually monitored. The total number of wells includes three shallow wells (15-40 feet) and two intermediate wells (60-90 feet).

- **Little Salt Springs** – NW 12th Street and Branched Oak Road
 Size: 123 acres
 Purchase price and date: \$472,188 on July 31, 2007
 Funding sources: Lower Platte South NRD (\$187,960.35)
 2005 NET grant (\$227,227.95)
 Partnership Funds (\$57,000)
 Owner: Lower Platte South NRD

Activity summary – Continued efforts to control noxious weeds and woody vegetation. South access to NW 12th Street through trees developed and old farm dump cleaned up. Prescribed fire completed during spring of 2012 on approximately 20 acres. Firebreaks were initiated on uplands area for potential 2013 burn.

- **Seacrest Range** (43 acres) – Located west of Folsom Street along both the north and south sides of Rosa Parks Way. The area is owned by the City of Lincoln. Efforts continued to remove cedar trees and Honey locust and to control noxious weeds.
- **Lincoln Saline Wetlands Nature Center** (92.7 acres) – It is located near Capitol Beach in Lincoln. The area is owned by the LPSNRD. Management activities in 2012 were noxious weed control and removal of Russian olive, Honey locust, and cedar trees. Considerable efforts to control Phragmites. An access easement was secured for management of a portion of the site. Fencing and gate installed. Well installed by UNL is monitored for groundwater levels and water quality.
- **Schleich Wetlands** (50.2 acres) – It is located southwest of Little Salt Creek near where it empties into Salt Creek and east of the Northbridge subdivision in Lincoln. The area is owned by the LPSNRD. Management activities in 2012 were noxious weed and woody vegetation control.
- **Whitehead Wetlands** (98.8 acres) – It is located east of 27th street and a short distance south of Interstate 80. The area is owned by the LPSNRD. Management activities in 2012 were noxious weed control and removal of woody vegetation.

Monitoring wells installed by UNL are continually monitored. The total number of wells includes five shallow wells (15-30 feet), four intermediate wells (60-90 feet), and one deep well (~180 feet).

- **Little Salt Fork Marsh Preserve** (174.2 acres) – It is located northwest of 1st and Raymond Road and owned by The Nature Conservancy. Management activities in 2012 included a prescribed grazing rotation throughout the property for the majority of the growing season and control of noxious weeds. Prescribed fire completed during spring of 2012 on approximately 5 acres.
- **Jack Sinn Wildlife Management Area** (1,352.3 acres) – Located south of Ceresco in Saunders and Lancaster counties. This area is owned by the NGPC. Perimeter fencing construction continues. Management activities in 2012 were noxious weed control, woody vegetation removal, and prescribed fire and grazing.

This program has been very successful and continues to accomplish many of the goals of the Implementation Plan for the Conservation of the Eastern Saline Wetlands. Your continued support for the conservation of these natural areas is appreciated. If you have any questions, please contact me at 402-476-2729 or tmalmstrom@lpsnrd.org. You can visit the saline wetland website at <http://lincoln.ne.gov/city/parks/ParksFacilities/wetlands/index.htm>